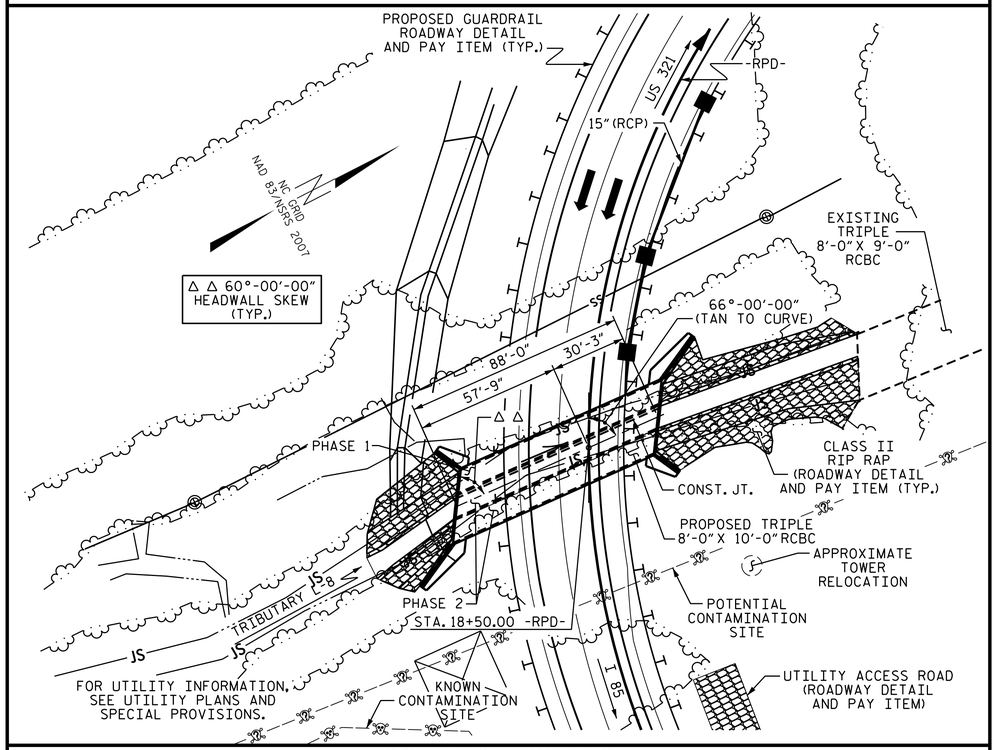
BENCHMARK #1: RR SPIKE IN BASE OF 15 INCH DOGWOOD STA. 53+71 -Y1- 78 FT. LEFT; EL. 719.05; N 563584, E 1347187



LOCATION SKETCH

ROADWAY DATA

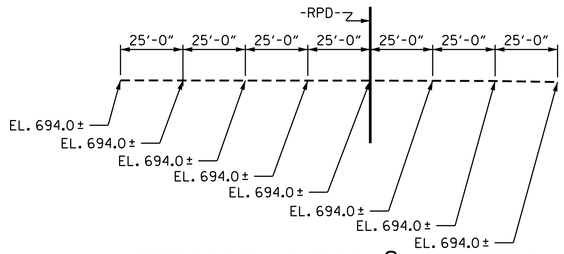
GRADE POINT ELEV. @ STA. 18+50.00 -RPD-	= 708.97
BED ELEV. @ STA. 18+50.00 -RPD-	= 693.00
ROADWAY SLOPES	= 2:1

HYDRAULIC DATA

DESIGN DISCHARGE	= 850 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 703.5
DRAINAGE AREA	= 1.12 SQ. MI.
BASE DISCHARGE (Q100)	= 950 C.F.S.
BASE HIGH WATER ELEVATION	= 704.51

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 2100 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YEARS
OVERTOPPING FLOOD ELEVATION	= 710.46



PROFILE ALONG ℄ CULVERT

NOTES

ASSUMED LIVE LOAD ---------- HL-93 OR ALTERNATE LOADING.

DESIGN FILL ---------- MIN. 4.90 MAX. 8.26

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN PHASE 1 CULVERT TO BE POURED IN THE FOLLOWING ORDER:
1. PHASE 1 WING FOOTINGS, FLOOR SLAB AND CURTAIN WALL TO THE CONSTRUCTION JOINT INCLUDING 4"OF PHASE 1 VERTICAL WALLS.
2. THE REMAINING PORTION OF PHASE 1 WALLS AND PHASE 1 WINGS FULL HEIGHT.
3. SILLS.

CONCRETE IN PHASE 2 CULVERT TO BE POURED IN THE FOLLOWING ORDER:
1. PHASE 2 WING FOOTINGS, FLOOR SLAB AND CURTAIN WALL TO THE CONSTRUCTION JOINT INCLUDING 4"OF PHASE 2 VERTICAL WALLS.
2. THE REMAINING PORTION OF PHASE 2 WALLS AND PHASE 2 WINGS FULL HEIGHT.
3. SILLS.
4. ROOF SLAB AND HEADWALLS.

FOR CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FT. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALLS AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

THE 15"DIA. PIPE THROUGH THE SIDEWALL OF THE CULVERT SHALL BE LOCATED BY THE ENGINEER. THE REINFORCING STEEL SHALL BE FIELD BENT AS NECESSARY TO CLEAR PIPE.

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

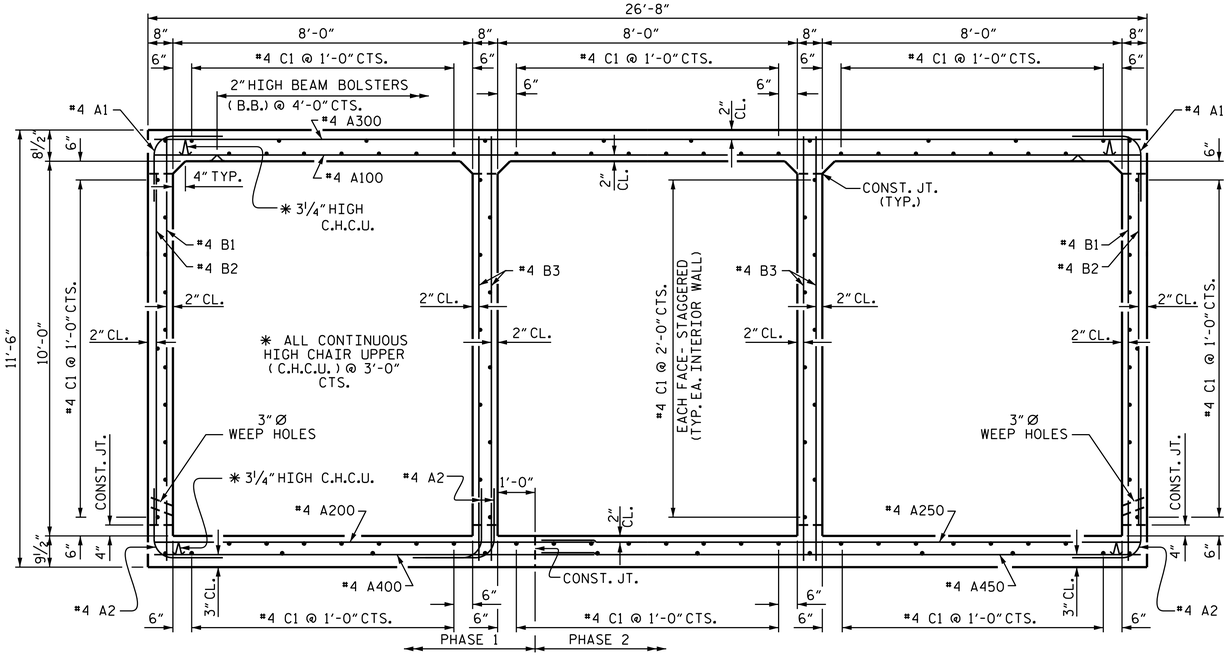
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.



RIGHT ANGLE SECTION OF BARREL

THERE ARE 110 "C" BARS IN SECTION OF BARREL.
(LOOKING DOWNSTREAM)

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
PHASE 1	89.1 C.Y.
PHASE 2	173.9 C.Y.
TOTAL	263.0 C.Y.
REINFORCING STEEL	
PHASE 1	11376 LBS.
PHASE 2	21316 LBS.
TOTAL	32692 LBS.
CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	
PHASE 1	157 TONS
PHASE 2	178 TONS
TOTAL	335 TONS

NORTH CAROLINA PROFESSIONAL SEAL 17230 ENGINEER WAEL S. ARAFAT

DocuSigned by: Wael Arafat 4139C12A32A8406...

1/17/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

F. A. PROJECT No. IMF-085-1(113)17

PROJECT NO. I-5000

GASTON COUNTY

STATION: 18+50.00 -RPD-

SHEET 1 OF 7 BRIDGE #445

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRIPLE 8 FT. X 10 FT. RCBC
66°-00'-00" SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-19
1			3			TOTAL SHEETS
2			4			26

DRAWN BY : H. T. BARBOUR DATE : 9-27-16
CHECKED BY : A. M. LEE DATE : 10-16
DESIGN ENGINEER OF RECORD: O. PUIGCERVER DATE : 11-16

13-JAN-2017 14:55
E:\TIPProjects-I\I5000\Structures\FinalPlans\Culvert #5\I5000_SMU_CU_5.dgn
tbarbour

CULVERT #5